REMARKS

Allowable Subject Matter

Applicant appreciates the indication of allowable subject matter for claims 7, 14, 15, 24, 41, and 42. However, all claims are believed to stand in condition for allowance, as detailed below.

The 103 Rejection of Claim 17

Sayeedi (U.S. Pub. 2003/0063584 A1) does not teach or suggest recognizing that a mobile station undergoing dormant handoff has multiple packet data service instances. Nor does Sayeedi even mention the possibility that a mobile station undergoing dormant handoff may have more than one dormant packet data service instance. As such, no aspect of Sayeedi's disclosed dormant handoff processing is dependent on the recognition of multiple packet data service instances.

In contrast, claim 17 is directed to a method (at a Packet Control Function or PCF). The claimed method explicitly includes the limitations of recognizing that a mobile station undergoing dormant handoff has multiple packet data service instances, and sending an indication of the multiple packet data service instances from the PCF to a Base Station (BS) that is supporting the dormant handoff of the mobile station.

In rejecting claim 17 as obvious over Sayeedi in combination with Wang (U.S. 6,909,899 B2), it is argued that Wang teaches that a mobile station having multiple packet data service instances and handing off of such mobile stations are conventional in CDMA2000 communications. Notably, paragraph [0010] in the Background of the filed application made clear that "conventional" IS-2000 systems performed a form of handoff for mobile stations having multiple packet data service instances, and Wang does not seem to add anything to the understanding of what was known or conventional in that regard.

However, Applicant's Background also stated that, "Current and past generation IS-2000 mobile stations treat each service instance like a separate data session inasmuch as these mobile stations perform dormant handoff re-registration for each service instance allocated to them." The Background also teaches that, "...a mobile station having six service instances performs six dormant handoffs, one for each service instance, each time it crosses packet zone boundaries."

What is critical is that Wang does not disclose the claimed limitations of a PCF recognizing that a mobile station undergoing dormant handoff has packet data service instances and sending an indication of the multiple packet data service instances to the BS supporting handoff of the mobile station. Because Wang does not disclose the PCF method of claim 17, and because Sayeedi fails even to mention packet data service instances, the combination of Sayeedi and Wang does not make claim 17 obvious.

The 103 Rejection of Claims 1, 2, 5, 8, 11, 13, 16, 18-23

Claims 1, 2, 5, 8, 11, 13, 16, and 18-23 are rejected under 35 U.S.C. 103(a) as obvious over Sayeedi, in view of Wang, and further in view of Lancelot (U.S. Patent No. 6,026,086).

Claim 1 is directed to a method performed at a base station, and it includes explicit limitations directed to selectively assigning a traffic channel to a mobile station undergoing dormant handoff, responsive to recognizing that the mobile station has more than one packet data service instance requiring dormant handoff. Note that claim 1 is amended in this response, to clarify that the selective assignment of a traffic channel to the mobile station is done in response to recognizing that the mobile station has additional packet data service instances (beyond a first one) that require dormant handoff.

As the filed specification teaches, conventionally no traffic channel is assigned to a mobile station undergoing dormant handoff, if there is no data ready to send to or from the

mobile station on any of its one or more packet data service instances. The filed application also teaches that, absent any assigned traffic channel, the mobile station will send origination message signaling over a common access channel that is shared with other mobile stations, for each of the multiple packet data service instances undergoing dormant handoff. As the last sentence of the Background section says, "*In this sense, then, a dormant mobile station with multiple service instances burdens the network to the same extent as a like multiple of individual mobile stations each having one service instance.*"

Claim 1, as an example of the subject matter at issue, avoids the above problem by recognizing that a mobile station undergoing dormant handoff has additional packet data service instances requiring dormant handoff. (In the claim, "additional" denotes further instances beyond a first packet data service instance for which a first dormant handoff request was received from the mobile station.) According to claim 1, in response to the recognition of these additional packet data service instances, the mobile station is selectively assigned a traffic channel, *to cause the mobile station to send additional dormant handoff requests for the additional packet data service instances over the assigned traffic channel.*

This purposeful assignment of a traffic channel to carry the additional handoff requests for dormant handoff of the additional packet data service instances, is not taught by any of the cited references, nor is it suggested by any combination of them.

As noted, Sayeedi does not mention packet data service instances and does not teach any distinction between handing off one or more than one packet data service instances. Moreover, and more critically, the whole purpose of Sayeedi *appears to be directed to handover instances where a dormant mobile station is not assigned a traffic channel.* With that understanding, Sayeedi cannot be argued as the primary reference in an obviousness rejection of a claim that hinges on the purposeful, selective assignment of a traffic channel.

See paragraph [0016] of Sayeedi, for example, stating that its invention is a new messaging method that is more efficient *in cases where a mobile station undergoing packet data dormant handoff does not need a traffic channel assigned to it*, as would be required if the mobile station had data ready to send to the network, or if the network had data ready to send to the mobile station. In particular, see the last two sentences of paragraph [0016] and also paragraphs [0017]-[0021], with particular emphasis on the second sentence in paragraph [0021]. That sentence states that, "*Specifically, a 60% reduction in signaling messages exchanged between the BSC and the MSC results when the MS can handoff without a traffic channel.*"

One of ordinary skill in the art therefore would correctly understand Sayeedi as teaching a signaling method for dormant handoff that allegedly offers improved efficiency in cases where no traffic channel is assigned to the mobile station. That teaching and the motivating purpose underlying that teaching are at direct odds with the teachings presented in Applicant's filed application and captured in the claims at issue.

Sayeedi, Wang, and Lancelot are not well combined, given Sayeedi's focus on signaling that comes into play when no traffic channel is assigned to a mobile station that initiated dormant handoff. More importantly, the combination does not teach the explicitly claimed limitation of selectively assigning a traffic channel to the mobile station to cause the mobile station to send additional dormant handoff requests for the additional packet data service instances over the assigned traffic channel, in response to recognizing that the mobile station has multiple packet data service instances requiring dormant handoff.

The above arguments apply with equal force to dependent claims 2, 5, 8, 11, 13, and 16, which depend directly or indirectly from claim 1, and which add further limitations to claim 1. As such, for at least the reasons given above, these dependent claims are not obvious over the combination of Sayeedi, Wang, and Lancelot.

Claims 18-23 depend directly or indirectly from claim 17, which is not obvious over the combination of Sayeedi and Wang, as explained above. The addition of Lancelot to that combination does not provide the teachings missing from Sayeedi and Wang with respect to claim 17. Thus, claims 18-23, which add further limitations to claim 17, are not obvious over the three-way combination of Sayeedi, Wang, and Lancelot.

Moreover, the use of Lancelot in the manner attempted in the obviousness rejection is not supported by the technical details of Lancelot. For example, the Office Action at the bottom of p. 8 states that Lancelot "discloses recognizing that a mobile station requires a traffic channel over which to send control signals, and sending control channels over a traffic channel...", and refers to Lancelot at col. 6, lines 36-54 for support.

First, the present invention does not "recognize" that a traffic channel is "needed" to send control signals. Rather, the claimed invention relates to the filed application's explanation that there may be signaling advantages associated with assigning a traffic channel to a dormant mobile station, in cases where that mobile station has multiple packet data services instances requiring dormant handoff. Second, the cited portion of Lancelot does not involve any "recognizing" in the sense implied by the rejection argument.

Instead, Lancelot seems to be primarily directed to cable television systems. The cited section of Lancelot simply states that a secondary station (such as an individual subscriber unit in a cable system) powers up, registers with a cable control unit (CCU) by scanning a downstream spectrum for a Cable Access Signaling (CACS) broadcast channel, synchronizing with that channel, obtaining information concerning the location of an access channel, requesting assignment of a traffic channel over that access channel, and then sending a registration message over the subsequently assigned traffic channel. After traffic channel assignment and registration, the secondary unit communicates as needed.

These Lancelot teachings appear to be unrelated to both the context and processing of Sayeedi. Particularly, Sayeedi expressly teaches that its new signaling is used advantageously in cases where a dormant mobile station undergoing handoff *is not* assigned a traffic channel. (Again, see paragraphs [0016]-[0021] of Sayeedi.) As such, it would not have been obvious to combine Lancelot with Sayeedi, with or without the addition of Wang to that mix.

The 103 Rejection of Claims 3, 4, 6, 9, 10, and 12

Claims 3, 4, 6, 9, 10, and 12 are rejected as obvious over Sayeedi, Wang, Lancelot, and "well known prior art."

As Section 2144.03 of the MPEP stipulates, "Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known."

In rejecting claim 3, the examiner takes Official Notice "of the fact that assigning a condition based on a threshold value is well known in the art." The problem with this official notice by the examiner is that Applicant did not generically claim *assigning a condition based on a threshold value*.

Instead, claim 3 adds to claim 1 the further limitation that selectively assigning a traffic channel to the mobile station comprises assigning the traffic channel if a total number of multiple service instances for the mobile station exceeds a threshold. This limitation illustrates one aspect of the advantages gained through the invention of claim 1. Namely, the base station method of claim 3 not only recognizes that there are multiple dormant packet data service instances requiring dormant handoff, it recognizes that assigning a traffic channel to carry the handoff signaling for the additional instances beyond the first one, may or may not be worth it, in dependence on the number of instances that are involved in the dormant handoff.

Sayeedi/Wang/Lancelot do not teach the selective traffic channel assignment limitation of claim 1. Nor does the combination therefore teach basing the selective assignment on the number of dormant packet data services involved in the handoff. Beyond that it is improper to abstract the generic concept of testing a threshold for assigning a condition from claim 3, and take Official Notice that such a concept is well known. Fundamentally, the cited combination of references does not teach or suggest the plain and unambiguous limitations at issue in claim 3 and claim 3 therefore is not obvious.

Likewise, claims 4, 6, 9, 10, and 12 are not obvious, and use of Official Notice as presented in the Office Action is likewise improper against these claims. Further, Applicant notes that the rejection of claim 9, for example, states that claim 9 is rejected for the same reasons used in the rejection of claim 3. However, the limitations at issue in claim 9 are materially different than those at issue in claim 3, and clarification on the basis for rejection of claim 9 is requested, should the examiner persist in these same rejections.

The same error applies to claim 12, and similar clarification is requested for the rejection of claim 10. Claim 10 differs from claims 3 and 4 and should not have been rejected for the same reasons as given for claims 3 and 4.

The 103 Rejection of Claims 25-28

Independent claim 25 and its dependent claims 26-28 are rejected for the same reasons used in the rejection of claims 17 and 20-22.

However, claim 25 is directed to a method at a Packet Data Serving Node (PDSN), while claim 17 is directed to a method at a Packet Control Function (PCF), and the claim limitations differ between independent claim 17 and independent claim 25, and also between their respective dependent claims. As such, Applicant requests that the examiner provide clarification on the rejection of claim 25, should the current rejection of claim 25 be maintained.

However, Applicant respectfully submits that the rejection of claim 25 should not be maintained, as the cited combination of references do not teach:

A method of managing dormant handoffs of mobile stations at a wireless communication network Packet Data Serving Node (PDSN), the method comprising:

receiving a registration request message for a first packet data service instance associated with a mobile station undergoing a dormant handoff;

determining that more than one packet data service instance is associated with the mobile station; and

sending an indication of multiple packet data service instances in a registration reply message responsive to the registration request message.

Further, as claim 25 is not obvious over the cited combination of references, its dependent claims 26-28 are not obvious for at least the same reasons.

The 103 Rejection of claim 29

The Office Action rejects independent claim 29 for the same reasons used against claim 1.

Claim 29 stipulates:

receiving a dormant handoff request from a mobile station for a first packet data service instance via a common access channel shared with other mobile stations;

determining whether the mobile station is associated with multiple packet data service instances; and

if the mobile station is associated with multiple packet data service instances, assigning a traffic channel to the mobile station to cause the mobile station to send additional dormant handoff requests for any additional packet data service instances via signaling on the assigned traffic channel.

The combination of references cited against claim 29 do not teach assigning a traffic channel to a mobile station (undergoing dormant packet data handoff) to cause the mobile station to send additional dormant handoff requests for any additional packet data service instances via signaling on the assigned traffic channel. Therefore, claim 29 is not obvious over the cited combination of references.

The 103 Rejection of claim 30

The Office Action rejects independent claim 30 for the same reasons used against claim 1. Claim 30 is an independent apparatus claim that is not obvious over the combination of references cited against claim 1, for at least the same reasons as given above for claim 1. Note that claim 30 is amended much like claim 1, to clarify that the selective assignment of a traffic channel is done responsive to recognizing that there are additional packet data service instances requiring dormant handoff.

The 103 Rejection of claims 31-40 and 43

Claims 31-40 and 43 are rejected as obvious over Sayeedi/Wang/Lancelot. As these claims depend from claim 30, which is not obvious over Sayeedi/Wang/Lancelot for the various reasons explained in this response, these dependent claims are not obvious over that combination.

Closing

For the reasons stated above, Applicant believes that all claims stand in condition for allowance, and reconsideration as such is respectfully requested. Further, the examiner is encouraged to call the undersigned attorney if there are questions regarding this response.

Respectfully submitted,
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Dated: October 7, 2009

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